

Curriculum Vitae

Burt Holzman

Work Address:
Chemistry Department (555)
Brookhaven National Laboratory
Upton, NY 11973
(631) 344-8362
burt@bnl.gov

Home Address:
252 Wildwood Road
Ronkonkoma, NY 11779
(631) 981-4640

Degrees: BS 1995 (Mechanical Engineering), Carnegie Mellon University
MS 1997 (Physics), University of Illinois at Chicago
PhD 2000 (Physics), University of Illinois at Chicago
Thesis: Hanbury-Brown and Twiss Correlations Between Pion Pairs from
Au+Au Collisions at 6, 8, and 10.8 GeV/u
Advisor: R. Russell Betts

Employment: University of Illinois at Chicago. Teaching assistant, 1995–1996.
University of Illinois at Chicago. Research assistant in high energy heavy ion
physics, 1996–2001.
Brookhaven National Laboratory. Postdoctoral research associate in nuclear
physics, 2001–present.
Southampton College of Long Island University. Adjunct assistant professor,
2002–present.
Brookhaven National Laboratory. Head of PHOBOS Computing, 2003–present.

Honors: Carnegie Mellon University, Carnegie Institute of Technology Dean’s List,
1995
University of Illinois at Chicago, University Fellow, 1997–98

Personal information: Born 3 July 1973, Evanston, Illinois

Experience and Statement of Research Interests

I joined the High Energy Heavy Ion (HEHI) research group at the University of Illinois (UIC) as a student in 1996. We collaborated on two experiments: E917, which ran at the Alternating Gradient Synchrotron during the Winter of 1996–1997; and PHOBOS, which took data at RHIC in 2000–2002, and will operate during the upcoming 2003–2004 run. In E917, I was responsible for monitoring the beam vertexing detectors and their subsequent calibration. Additionally, I managed the final analysis pass of the data as “passmeister”. Due to the extended length of the E917 analysis, the physics working group set up at UIC to study two-particle correlations evolved from four members to one. The correlation studies presented in my dissertation were solely my work from the E917 data. Correlation radii were presented as functions of beam energy and with respect to the reaction plane. As a

student in the PHOBOS experiment, I was responsible for the design and construction of a clean room test facility for the silicon microstrip detectors that comprise nearly the entire apparatus. The facility contains silicon wafer handling tools, a vibration isolation station, a sub-millimeter wafer prober, measurement electronics, and a data acquisition system which I designed and programmed. During my tenure in the HEHI group, I also served as system administrator for a computing pool which quadrupled in size and diversity. Besides providing technical support, I established both short-term and long-term computing strategies for the group.

As a post-doc with PHOBOS at Brookhaven National Laboratory (BNL), I have been the primary person responsible for examining data as it is read out from the data acquisition system (“online monitoring”) during the 2001, 2002, and 2003 runs. Additionally I managed the calibration and transferral of data from the experimental counting house to a distributed computing farm where preprocessing begins (“data transport”). The online monitoring system was completely rewritten from scratch to use a distributed modular architecture, allowing high-level processing in real-time in the counting house. The data transport system, new for the 2001 run, was also written completely from scratch, and ensures data integrity as well as efficiency, with no user intervention required. As a result of the data transport upgrades I wrote for the 2002 run, the data transport speed nearly doubled. My focus on data transport dovetails nicely with my additional responsibilities as PHOBOS experimental liaison to the RHIC Computing Facility (“RCF”). This responsibility is particularly important, as RCF is extremely understaffed and often needs additional technical and strategic insight into RHIC computing issues; and the RCF is as critical a component in PHOBOS analyses as the detector itself. Additionally, I am the system administrator for all PHOBOS Linux computing centered at Brookhaven, and as such am responsible for cybersecurity of all PHOBOS computing at BNL. This is no small task, as Department of Energy (DOE) and BNL security initiatives present an ever-moving target for compliance.

I recently was promoted to the head of PHOBOS computing, a senior position which reports solely to the Project Manager and Spokesman. I am implementing a major software initiative, involving a complete restructure of our analysis and operations software, which will lead to severe decreases in memory use and build time. On the hardware front, I am supervising the current upgrade to the PHOBOS Data Acquisition system, which will use a new state-of-the-art streaming data recorder, resulting in a 200–300% increase in acquisition. This includes involved infrastructure changes in both the data transport system and the online monitoring system. Both hardware and software involve not only hands-on technical expertise but the management of dozens of graduate students and staff at several different institutions.

My current research plan involves understanding the hot and dense matter created at RHIC. In particular, I am interested in investigating Hanbury-Brown and Twiss correlations (HBT), which is the study of correlations in relative momentum between pairs of identical particles. This technique can reveal the spatiotemporal evolution of the collision source. Due to the design of the PHOBOS spectrometer, we are able to determine the geometric and temporal radii of the source as a function of rapidity ($y = \tanh^{-1} p_z/E$), a transformed longitudinal

velocity. We anticipate presenting these results at the premier international conference in the field, Quark Matter 2004. HBT with respect to rapidity is of particular interest because longitudinal dynamics (collective motion in particular) is not yet understood at RHIC. When theorists are able to reproduce the wealth of data being generated, it will provide insight into the dynamics of the collision zone, the ensuing expansion, and freeze-out.

My proposed research plan has two components. For the immediate future, the analysis of RHIC data is ongoing, and the PHOBOS experiment will continue to publish results. PHOBOS is a relatively small collaboration with a relatively large phase space which does most of its analysis via the internet (forums, mailing lists, and “VRVS” videoconferencing). One or two people at an institution are able to take leads in analyses and convene both analysis and review meetings from remote locations, requiring only a cheap webcam and microphone. Also, because the very design of the PHOBOS experiment is simple – silicon microstrip detectors throughout, minimum bias – the learning curve is less steep for involving undergraduate students. There is also a large need for not only analysis of data, but generation of simulated data from a variety of models. Undergraduate students find Monte Carlo models particularly interesting; their absolute control over the initial conditions makes nuclear physics more like a pedagogical textbook exercise as opposed to the difficult challenge presented by real experimental data.

In the longer term, my goal is to assume a prominent role in the Compact Muon Solenoid (CMS) experiment to take place at the Linear Hadron Collider (LHC) at CERN. There is a small but potent group of heavy ion physicists who have formed their own mini-collaboration within CMS, with U.S.-based management, based at a number of institutions including MIT and UIC. My close professional and personal ties to UIC would allow me to instantly collaborate on CMS, where most of the current work is in the area of online monitoring, simulations, data acquisition, and distributed computing. This fortunately happens to coincide with many of my strengths as an experimentalist and my previous experience in PHOBOS and E917. If startup or external funds are available, I would construct a computing cluster – at first to principally run simulations for both PHOBOS and CMS; later on, to serve as an analysis node for CMS using the distributed GRID technology in place at the LHC. It should be noted that funding has already been obtained for some computing from NSF at Rice and MIT; further contributions from U.S. funding agencies are anticipated. We have the potential to make significant contributions to the CMS heavy ion program given a small amount of funding, my efforts, and the work of a few talented undergraduates.

Statement of Teaching Philosophy

I have followed a fairly typical path for an experimentalist with regards to teaching: teach during the first year of graduate school, and then focus on research for the remainder of the graduate career and postdoctoral work. Research has provided me with plenty of experience to draw on for one-on-one instruction; while still a graduate student, I directed two undergraduates in summer internships, who assisted us with analysis of the E917 experiment at the AGS. More recently, I have been supervising a Taiwanese graduate student whose advisor remains in Taiwan, as well as mentoring a junior post-doctoral researcher resident at the laboratory. While these opportunities have allowed me to teach advanced concepts, teaching this fall and in 2002 made me realize that I missed the classroom, and the reward of asking students to tackle problems where, unlike research, I know *a priori* that solutions exist!

In my experience, there are three categories of students in introductory-level classes, each of which present their own challenges:

- * The prepared – these are students who have natural aptitude for physics; and/or who have had the material before in their high school classes. It can be difficult to keep these students interested in lecture; some will put in the bare minimum of effort.

- * The unprepared – these students simply haven't mastered the prerequisites for the course, for a variety of reasons. The basic curriculum can be challenging – if you haven't mastered algebra, how can you understand Newton's second law?

- * The gradient – the first two categories are fairly distinct and lightly populated; the rest of the class fills in the middle ground. Students in 200-Level courses have a heterogeneous variety of skills at varying degrees of mastery.

I have found the most effective method for cutting across these strata is that of peer instruction. In a large lecture, I have the students break into working groups of 3-4 students once or twice a day to solve relevant exercises and problems. Discussion (although, of course, not outright plagiarism) of homework assignments is encouraged in study groups. In a laboratory section, this division is natural and generally required due to a scarcity of expensive experimental equipment.

To reach both the prepared and unprepared students, I structure classes to include not only the basic seminal course material but more advanced topics and even some that may be outside the scope entirely. As an example, in a recent introductory laboratory course, I required students to propagate their measurement errors throughout their calculations, which had not previously been required of them in any of their science classes. I gave them the option of using formulae by rote, or performing simple differential calculus to derive the errors themselves. In the final exam, I was pleased to note that almost all students propagated errors correctly; some via memorization, others via derivation, but all arrived at the right answer. In the same class, I included supplementary material as well. I included strikingly relevant excerpts from Galileo's *Discorsi* when working with inclined planes. As an example of technical writing, I provided the highly readable 1911 paper by Geiger and

Marsden which led Rutherford to the nuclear model of matter. In an introductory course, such material helps keep non-science majors interested who may fall into the 'unprepared' category because they have not had a solid mathematical foundation in high school.

While an engineering student at Carnegie Mellon, I was immersed in a school of thought which has transferred wholly into my teaching. There is a simple relevant proverb: "Give a man a fish, and he eats for one day; teach a man to fish, and he will eat for a lifetime." This philosophy should be applied toward problem solving in any science program at all institutions. Analytical reasoning and a step-by-step approach toward any issue is crucial not only in the ultimate undergraduate goal – receipt of the diploma – but in research and in daily life. To this end, I give more free-form and less structured assignments from time to time; for example, in a laboratory course, the nature and even conclusions of the lab report may vary from student to student. I encourage them to think about the data and to draw conclusions without spoon-feeding them a goal. After the initial trepidation passes, my students seem to be more responsive to the requirement that they use their creative impulses rather than fill out worksheets full of data. In a lecture course, I give similar assignments on a regular basis; the soul of physics, after all, is empirical observation. If I see an article in the press about science, I may hand it out to students and ask them to think critically about the conclusions that are drawn; in essence, to act as peer referees, singling out misuses of statistics or data.

Finally, I believe it is critical that instructors make themselves available to students. I encourage students to not only drop by my regular office hours but to call and e-mail for specific appointments. But I believe also that faculty need to be part of the larger college community, as well. As a student, I know that I was more attentive to professors that I saw around campus, attending concerts, or football games; knowing my instructors were "real people" rather than exalted lecturers made communication (in both directions!) with them easier, and I was able to understand more in their classes.

In summary, my philosophy of teaching is the following: including a wide breadth of material in order to reach the most students possible; emphasizing problem-solving skills as well as basic course material; and being accessible to students on many different levels. I believe these are the key ingredients in being a successful educator.

Selected Talks and Publications

Invited Talks:

Messages from the Inferno: Results from the PHOBOS

Experiment at RHIC

Chemistry Department Colloquium (“Friday Society”)

November 2002

Latest Results from the PHOBOS Experiment at RHIC

APS Division of Nuclear Physics Meeting

April 2002

HBT and Other Correlations from the PHOBOS Experiment

INT/RHIC Winter Workshop, Seattle WA

January 2002

Publications:

A Beam Vertex Detector Using Scintillating Fibers

B. B. Back, R. R. Betts, A. Gillitzer, W. F. Henning, D. J. Hofman, V. Nanal,

A. H. Wuosmaa, R. Ganz, B. Holzman, D. McLeod, W. R. Binns, J. W. Epstein

Nucl. Instrum. Meth. A412, 191 (1998)

Excitation Function of K^+ and π^+ Production in Au+Au Reactions at 2–10 AGeV

L. Ahle *et al.*

Phys. Lett. B476, 1 (2000)

An Excitation Function of K^- and K^+ Production in Au+Au Reactions at the AGS

L. Ahle *et al.*

Phys. Lett. B490, 59 (2000)

Charged Particle Multiplicity Near Mid-rapidity in Central Au+Au Collisions at

$\sqrt{s_{NN}} = 56$ and 130 GeV

B. B. Back *et al.*

Phys. Rev. Lett. 85, 3100 (2000)

Baryon Rapidity Loss in Relativistic Au+Au Collisions

B. B. Back *et al.*

Phys. Rev. Lett 86, 1970 (2001)

Ratios of Charged Particles to Antiparticles Near Mid-rapidity in Au+Au Collisions at $\sqrt{s_{NN}} = 130$ GeV

B. B. Back *et al.*

Phys. Rev. Lett. 87, 102301 (2001)

Charged-particle Pseudorapidity Density Distributions from Au+Au Collisions at $\sqrt{s_{NN}} = 130$ GeV

B. B. Back *et al.*

Phys. Rev. Lett. 87, 102303 (2001)

Antilambda Production in Au+Au Collisions at 11.7A GeV/c

B. B. Back *et al.*

Phys. Rev. Lett. 87, 242301 (2001)

Energy Dependence of Particle Multiplicities Near Mid-rapidity in Central Au+Au Collisions

B. B. Back *et al.*

Phys. Rev. Lett. 88, 22302 (2002)

Pseudorapidity and Centrality Dependence of the Collective Flow of Charged Particles in Au+Au Collisions at $\sqrt{s_{NN}} = 130$ GeV

B. B. Back *et al.*

Phys. Rev. Lett. 89, 222301 (2002)

Centrality Dependence of Charged Particle Multiplicity at Midrapidity in Au+Au Collisions at $\sqrt{s_{NN}} = 130$ GeV

B. B. Back *et al.*

Phys. Rev. C65, 31901R (2002)

Centrality Dependence of the Charged Particle Multiplicity near Mid-rapidity in Au+Au Collisions at $\sqrt{s_{NN}} = 130$ and 200 GeV

B. B. Back *et al.*

Phys. Rev. C65, 061901R (2002)

Proton Emission in Au+Au Collisions at 6, 8, and 10.8 GeV/nucleon

B. B. Back *et al.*

Phys. Rev. C66, 054901 (2002)

Ratios of Charged Antiparticles to Particles Near Mid-rapidity in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV

B. B. Back *et al.*

Phys. Rev. C67, 021901 (2003)

The PHOBOS detector at RHIC

B. B. Back *et al.*

Nucl. Instrum. Meth. A499, 603 (2003)

Significance of the Fragmentation Region in Ultrarelativistic Heavy-ion Collisions

B. B. Back *et al.*

Phys. Rev. Lett. 91, 052303 (2003)

Centrality Dependence of Charged Hadron Transverse Momentum Spectra in d+Au Collisions
at $\sqrt{s_{NN}} = 200$ GeV

B. B. Back *et al.*

Phys. Rev. Lett. 91, 072302 (2003)

Comparison of the Total Charged-Particle Multiplicity in High-Energy Heavy Ion Collisions
with e^+e^- and $pp/\bar{p}p$ Data

B. B. Back *et al.*

Submitted to Phys. Rev. Lett.

Charged Hadron Transverse Momentum Distributions in Au+Au Collisions at
 $\sqrt{s_{NN}} = 200$ GeV

B. B. Back *et al.*

Submitted to Phys. Lett. B

Proceedings:

An Excitation Function of Particle Production at the AGS

J. Dunlop (for the E917 collaboration)

In Proceedings of the 6th Conference on the Intersections of Particle and Nuclear
Physics, Big Sky, MT, 1997

Multiplicity Distributions in Au+Au Collisions at Various Beam Energies

J. Chang (for the E866 and E917 collaborations)

In Advances in Nuclear Dynamics 3: Proceedings of the 13th Winter Workshop on
Nuclear Dynamics, Marathon, FL, 1997, p. 145–151

PHOBOS Rising at Brookh(e)aven

R. Ganz (for the PHOBOS collaboration)

In Advances in Nuclear Dynamics 3: Proceedings of the 13th Winter Workshop on
Nuclear Dynamics, Marathon, FL, 1997, p. 179–187

Strangeness Production in High Density Baryon Matter

R. Ganz (for the E917 collaboration)

In Proceedings of the 4th International Conference on Strangeness in Quark Matter,
Padova, Italy, 1998

E917 at the AGS: High Density Baryon Matter

R. Pak (for the E917 collaboration)

In Advances in Nuclear Dynamics 4: Proceedings of the 14th Winter Workshop on
Nuclear Dynamics, Snowbird, UT, 1998

HBT Studies at the AGS with E917: A Status Report

B. Holzman (for the E917 collaboration)

In Advances in Nuclear Dynamics 5: Proceedings of the 15th Winter Workshop on
Nuclear Dynamics, Park City, UT, 1999, p. 190–195

Strangeness Production in Au+Au at the AGS: Recent Results from E917

W. Chang (for the E917 collaboration)

In Advances in Nuclear Dynamics 5: Proceedings of the 15th Winter Workshop on
Nuclear Dynamics, Park City, UT, 1999, p. 215–222

Results from the E917 Experiment at the AGS

B. B. Back (for the E917 collaboration)

In Advances in Nuclear Dynamics 5: Proceedings of the 15th Winter Workshop on
Nuclear Dynamics, Park City, UT, 1999, p. 131–138

PHOBOS: A Status Report

S. Steadman (for the PHOBOS collaboration)

In Advances in Nuclear Dynamics 5: Proceedings of the 15th Winter Workshop on
Nuclear Dynamics, Park City, UT, 1999, p. 291–298

Preliminary Flow Analysis in Experiment E917 at the AGS

P. J. Stankas (for the E917 collaboration)

In Heavy Ion Physics From Bevalac to RHIC: Proceedings of the Relativistic Heavy
Ion Symposium (APS Centennial Meeting), Atlanta, GA, 1999, p. 93–97

The Dependence of HBT Source Parameters on Beam Energy and Reaction Plane at AGS
Energies

B. Holzman (for the E917 collaboration)

In Heavy Ion Physics From Bevalac to RHIC: Proceedings of the Relativistic Heavy
Ion Symposium (APS Centennial Meeting), Atlanta, GA, 1999, p. 59–64

Directed Flow in 10.8 GeV/nucleon Au+Au Collisions Measured in Experiment E917 at the AGS

D. Hofman (for the E917 collaboration)

In Heavy Ion Physics From Bevalac to RHIC: Proceedings of the Relativistic Heavy Ion Symposium (APS Centennial Meeting), Atlanta, GA, 1999, p. 98–102

Antibaryon Production in Au+Au Collisions at the AGS

G. Heintzelman (for the E917 collaboration)

In Heavy Ion Physics From Bevalac to RHIC: Proceedings of the Relativistic Heavy Ion Symposium (APS Centennial Meeting), Atlanta, GA, 1999, p. 205–209

Kaon Production in Au+Au Collisions at the AGS

C. Ogilvie (for the E802 and E917 collaborations)

Nucl. Phys. A630, 571 (1998)

An Excitation Function at the AGS: E917 - Probing the Dynamics of Heavy Ion Collisions

R. Seto (for the E917 collaboration)

Nucl. Phys. A638, 506 (1998)

Au+Au Reactions at the AGS: Experiments E866 and E917

C. Ogilvie (for the E866 and E917 collaborations)

Nucl. Phys. A638, 506 (1998)

Strangeness Production in High Density Baryon Matter

R. Ganz (for the E917 collaboration)

J. Phys. G25, 247 (1999)

Particle Production at the AGS: an Excitation Function

J. Dunlop (for the E866 and E917 collaborations)

Nucl. Phys. A661, 472 (1999)

Production of ϕ -mesons in Au-Au Collisions at the AGS

R. Seto (for the E917 collaboration)

Nucl. Phys. A661, 506 (1999)

Results from Experiment E917 for Au+Au Collisions at the AGS

D. Hofman (for the E917 collaboration)

Nucl. Phys. A661, 75 (1999)

The PHOBOS Experiment at the RHIC Collider

J. Katzy (for the PHOBOS collaboration)

Nucl. Phys. A661, 690 (1999)

The PHOBOS Silicon Sensors

B. B. Back, R. R. Betts, R. Ganz, K. H. Gulbrandsen, B. Holzman, W. Kucewicz, W. T. Lin, J. Mülmenstädt, G. van Nieuwenhuizen, R. Nouicer, H. Pernegger, M. Reuter, P. Sarin, V. Tsay, C. M. Vale, B. Wadsworth, A. Wuosmaa, B. Wyslouch
Nucl. Phys. (Proc. Suppl.) B78, 245 (1999)

First Results from the PHOBOS Experiment at RHIC

A. H. Wuosmaa (for the PHOBOS collaboration)
In CAARI 2000: 16th International Conference on the Application of Accelerators in Research and Industry, Denton, TX, 2000, p. 231–234

The PHOBOS Silicon Pad Sensors

B. B. Back, R. Betts, R. Ganz, K. H. Gulbrandsen, B. Holzman, W. Kucewicz, W. T. Lin, J. Mülmenstädt, G. J. van Nieuwenhuizen, R. Nouicer, H. Pernegger, M. Reuter, P. Sarin, V. Tsay, C. M. Vale, B. Wadsworth, A. Wuosmaa, B. Wyslouch
Nucl. Instrum. Meth. A447, 257 (2000)

First Results from the PHOBOS Experiment at the RHIC Collider

J. Katzy (for the PHOBOS collaboration)
Intl. J. Mod. Phys. A16, 1265 (2000)

E917 Results on Strangeness Production in Au+Au Collisions at AGS

W.-C. Chang (for the E917 collaboration)
In High Energy Physics (ICHEP 2000): Proceedings of the 30th International Conference, Osaka, Japan, 2000

Au+Au Collisions in Experiment E917 at the Brookhaven AGS

R. Pak (for the E917 collaboration)
Nucl. Phys. A663, 757 (2000)

First RHIC Physics Results from the PHOBOS Experiment

J-L. Tang (for the PHOBOS collaboration)
In Relativistic Nuclear Physics and Quantum Chromodynamics (Proceedings of the XV International Seminar on High Energy Physics Problems), Dubna, Russia, 2000

Results from the PHOBOS Experiment on Au+Au Collisions at RHIC

K. Wozniak (for the PHOBOS collaboration)
In Proceedings of the XXX International Symposium on Multiparticle Dynamics, Tihany, Hungary, 2000, p. 458–463

How Strange is PHOBOS? First RHIC Physics Results and Future Prospects

G. Stephans (for the PHOBOS collaboration)

J. Phys. G27, 659 (2001)

First Performance Results of the PHOBOS Silicon Detectors

H. Pernegger (for the PHOBOS Collaboration)

Nucl. Instrum. Meth. A473, 197–204 (2001)

Silicon Pad Detectors for the PHOBOS Experiment at RHIC

R. Nouicer, B. B. Back, R. R. Betts, K. H. Gulbrandsen, B. Holzman, W. Kucewicz,
W. T. Lin, J. Mülmenstädt, G. J. van Nieuwenhuizen, H. Pernegger,
M. Reuter, P. Sarin, G. S. F. Stephans, V. Tsay, C. M. Vale, B. Wadsworth,
A. Wuosmaa, B. Wyslouch

Nucl. Instrum. Meth. A461, 143–149 (2001)

Results from the PHOBOS Experiment at RHIC

B. B. Back (for the PHOBOS collaboration)

In Advances in Nuclear Dynamics 7: Proceedings of the 17th Winter Workshop on
Nuclear Dynamics, Park City, UT, 2001, p. 39–49

Systematics of Charged Particle Production in Heavy-Ion Collisions with the PHOBOS
Detector at RHIC

P. Steinberg (for the PHOBOS collaboration)

In Proceedings of the XXXI International Symposium on Multiparticle Dynamics,
Datong, China, 2001, p. 145

PHOBOS at RHIC 2000

E. J. Garcia (for the PHOBOS Collaboration)

Rev. Mex. Fis. 47-2, 98 (2001)

Systematic Study of Au-Au Collisions with AGS Experiment E917

B. Holzman (for the E917 collaboration)

Nucl. Phys. A698, 643 (2002)

The PHOBOS Detector at RHIC

R. Pak (for the PHOBOS collaboration)

Nucl. Phys. A698, 416 (2002)

First Results from the PHOBOS experiment at RHIC

G. Roland (for the PHOBOS collaboration)

Nucl. Phys. A698, 54 (2002)

First Results from the PHOBOS Spectrometer

N. K. George (for the PHOBOS collaboration)

Nucl. Phys. A698, 655 (2002)

Determination of the Collision Geometry and Measurement of the Centrality

Dependence of $dN/d\eta$ at Mid-rapidity

J. Katzy (for the PHOBOS collaboration)

Nucl. Phys. A698, 555 (2002)

Charged Particle Flow Measurement for $|\eta| > 5.3$ with the PHOBOS detector

I. C. Park (for the PHOBOS collaboration)

Nucl. Phys. A698, 564 (2002)

$dN_{ch}/d\eta$ distributions from PHOBOS

A. H. Wuosmaa (for the PHOBOS collaboration)

Nucl. Phys. A698, 88 (2002)

Performance of the PHOBOS Silicon Sensors

M. P. Decowski *et al.*

Nucl. Instrum. Meth. A478, 299–302 (2002)

PHOBOS: The Early Years

G. S. F. Stephens (for the PHOBOS collaboration)

Acta Phys. Pol. B33, 1419 (2002)

Centrality Measurements in the PHOBOS Experiment

A. Olszewski (for the PHOBOS collaboration)

Acta Phys. Pol. B33, 1449 (2002)

Overview of Results from PHOBOS Experiment at RHIC

A. Olszewski (for the PHOBOS collaboration)

J. Phys. G28, 1801 (2002)

Charged Particle Multiplicity and Limiting Fragmentation in Au+Au Collisions
at RHIC Energies Using the PHOBOS Detector

R. Nouicer (for the PHOBOS collaboration)

In Proceedings of the 37th Recontres de Moriond on QCD and
Hadronic Interactions, Les Arcs, France, 2002

The PHOBOS Experiment at RHIC

E. J. Garcia (for the PHOBOS collaboration)

Heavy Ion Physics 16, 153 (2002)

Global Observations from PHOBOS

P. Steinberg (for the PHOBOS collaboration)

In Proceedings of the 31st International Conference on High Energy Physics (ICHEP 2002), Amsterdam, The Netherlands, 2003

Charged Hadron Transverse Momentum Distributions in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV

G. J. van Nieuwenhuizen (for the PHOBOS collaboration)

In Proceedings of the 31st International Conference on High Energy Physics (ICHEP 2002), Amsterdam, The Netherlands, 2003, p. 77–79

A First Look at Au+Au Collisions at RHIC Energies Using the PHOBOS Detector

B. Back (for the PHOBOS collaboration)

Pramana 60, 921 (2003)

Global Observations from PHOBOS

M. D. Baker (for the PHOBOS collaboration)

Nucl. Phys. A715, 65 (2003)

Universal Behavior of Charged Particle Production in Heavy Ion Collisions

P. Steinberg (for the PHOBOS collaboration)

Nucl. Phys. A715, 490 (2003)

Identified Particles in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV

B. Wosiek (for the PHOBOS collaboration)

Nucl. Phys. A715, 510 (2003)

Flow and Bose-Einstein Correlations in Au+Au Collisions at RHIC

S. Manly (for the PHOBOS collaboration)

Nucl. Phys. A715, 611 (2003)

Charged Hadron Transverse Momentum Distributions in Au+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV

C. Roland (for the PHOBOS collaboration)

Nucl. Phys. A715, 745 (2003)

Recent Results from PHOBOS at RHIC

R. Pak (for the PHOBOS collaboration)

Nucl. Phys. A721, 227 (2003)

Contributed Talks:

HBT Studies at the AGS with E917: A Status Report
Winter Workshop on Nuclear Dynamics, Park City, Utah
January 10, 1999

An HBT Excitation Function at AGS Energies
APS Centennial Meeting, Atlanta, GA
March 23, 1999

Reaction Plane Dependence of $\pi^-\pi^-$ Correlations in Au+Au Collisions at AGS Energies
Division of Nuclear Physics Meeting, Williamsburg, VA
October 6, 2000

Hanbury-Brown and Twiss Correlations between Pion Pairs from Au+Au Collisions at 6, 8, and 10.8 GeV/u
Thesis Defense, Chicago, IL
October 13, 2000

HBT with E917 at the AGS
Columbia University Nuclear Physics Seminar, New York City, NY
November, 2000